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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,990	06/06/2006	Arnoldus Jacobus Kruger	9173/94640	9559

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EXAMINER
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JACOBSON, MICHELE LYNN

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,990	<b>Applicant(s)</b> KRUGER ET AL.	
	<b>Examiner</b> MICHELE JACOBSON	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) 17-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Examiner Notes*

1. Any objections and/or rejections made in the previous action, and not repeated below, are hereby withdrawn.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruhashi et al. U.S. Patent No. 5,106,890 (hereafter referred to as Maruhashi) and Truter et al. U.S. Patent No. 5,972,375 (hereafter referred to as Truter).

4. Maruhashi teaches a film prepared from a composition comprising polyvinyl alcohol, a starch and a crosslinking agent having excellent water resistance. (Col. 1, lines 5-10) Examples of starches include carboxymethyl starches and hydroxyethyl starches. (Col. 3, lines 11-14) Maruhashi recites that the degree of polymerization of the polyvinyl alcohol is from 300 to 10,000 (M.W. 13,200 g/mol- 440,000 g/mol) preferably 1,000 to 6,000 (M.W. 44,000 g/mol- 264,000 g/mol) In order to further improve water resistance of the film Maruhashi teaches admixing of the polyvinyl alcohol and starch component with a crosslinking agent. (Col. 3, lines 43-45) Any compound can be used as the crosslinking agent in the invention of Maruhashi so long

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as the compound can react with any reactive groups in the polyvinyl alcohol and the starch to intermolecularly form a crosslinked structure. (Col. 3, lines 46-50) Once the composition is formed into a film, post treatment such as wherein the film acetalized or a treatment wherein the film is coated or laminated with a hydrophobic resin can be conducted. (Col. 5, lines 51-56, claim 6) Hydrophobic resins such as vinylidene chloride and polyethylene are recited to be useful when a polyvinyl alcohol starch film is used in an application requiring water resistance. (Col. 1, lines 47-53) The films are recited to be useful a films, bags, containers or vessels for wrapping or packaging foods or textiles. (Col. 6, lines 1-4)

5. Maruhashi is silent regarding utilizing methyl vinyl ether/maleic anhydride as a crosslinking agent and activation of the hydrophobic substrate material.

6. Truter teaches a polyvinyl alcohol film material. (Col. 6, lines 1-3) Methyl vinyl ether/maleic anhydride is recited to be useful as a crosslinking agent for compositions comprising polyvinyl alcohol. (Col. 1, lines 34-45)

7. Both Maruhashi and Truter are directed to film materials comprising polyvinyl alcohol. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the methyl vinyl ether/maleic anhydride recited by Truter as the crosslinking agent disclosed to be necessary in Maruhashi. The selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination. ("Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle." *Sinclair & Carroll Co. v.*

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*Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious)) (MPEP 2144.07)

8. The obvious selection of methyl vinyl ether/maleic anhydride as the crosslinking agent in Maruhashi would have produced a polyvinyl alcohol film with the same composition recited in claim 1.

9. Regarding claims 1-3 and 13: The modification of Maruhashi with Truter produces a hydrophobic base resin coated with a polyvinyl alcohol/ ethyl vinyl ether/maleic anhydride interpenetrating physical network barrier component as claimed in claim 1 for use as a package or container as claimed in claim 2 since such a composition would comprise the same materials as disclosed by applicant.. The recitation in Maruhashi of containers or vessels is reasonably broadly interpreted by the examiner to read on the bottles and jars recited in claim 3. The composition comprises polyvinyl alcohol and ethyl vinyl ether/maleic anhydride as claimed in claim 13.

10. Regarding claims 4 and 5: It would have been obvious to one having ordinary skill in the art at the time the invention was made that the barrier material recited by Maruhashi could be utilized on the interior or exterior of a container depending on what side required barrier properties.

11. Regarding claims 6 and 7: The barrier film of Maruhashi modified by Truter would be expected to exhibit electrostatic and covalent bonding to the hydrophobic base

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component recited due the attraction of the film for the base component and the presence of the crosslinking agent in the film.

12. Regarding claims 8-10: Maruhashi recites utilizing hydrophobic materials such as polyvinylidene chloride as a base material to protect the polyvinyl alcohol/starch material in applications requiring water resistance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the polyvinyl alcohol/starch film in a sandwich structure between two layers of polyvinylidene chloride in order to increase the water resistance of the container produced. This obvious modification would have produced the invention claimed in claims 8-10.

13. Regarding claim 11: Maruhashi recites polyethylene as a hydrophobic base material and the use of the film in containers. Therefore a polyethylene container coated on the outside with the film of Maruhashi modified by Truter reads on the polyethylene bottle comprising a barrier component recited in claim 11. Regarding the intended use limitation recited in claim 11 of “a bottle for use in the bottling of carbonated drinks or beverages” a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the instant case, a container such as recited by Maruhashi would be capable of containing a carbonated beverage and therefore meets the limitations of claim 11.

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14. Regarding claims 14 and 15: The polyvinyl alcohol recited by Maruhashi is disclosed to have a range of molecular weight which encompasses the molecular masses claimed in claims 14 and 15. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990)

15. Regarding claim 16: The examiner takes official notices that plasma treatment and flame treatment are universally known in the laminate arts to increase adherence between two polymeric layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have plasma or flame treated the hydrophobic resin layer recited by Maruhashi prior to application of the barrier film recited. This obvious utilization of a technique for improving adhesion well known in the art would have produced the invention as claimed in claim 16.

### ***Response to Arguments***

16. Applicant's arguments with respect to claims 1-11 and 13-16 have been considered but are moot in view of the new ground(s) of rejection.

17. The examiner notes that applicant has presented arguments regarding the barrier properties of the film of Maruhashi and applicant's perceived deficiencies thereof. However, any arguments regarding specific barrier levels provided by applicant's invention are not germane since there are **no** limitations directed to the level of barrier property provided by the coating claimed by applicant in the instantly pending

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claims. If applicant wishes to assert that the amount of barrier property provided by the claimed invention is unexpected, then the unexpected results asserted must be commensurate in scope with the claims.

18. Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). (MPEP 716.02 (d))

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson  
Examiner /M. J./  
Art Unit 1794

/Rena L. Dye/  
Supervisory Patent Examiner, Art Unit 1794

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